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ABSTRACT

Constructivism is a perspective on learning that is initiated from the learner's perspective rather than by that of the teacher; understanding is constructed by the learner rather than placed upon the learner. If constructivism is fostered in teacher education, practical reasoning can encourage teacher development to its fullest. (The concept of practical reasoning was originally proposed by Aristotle and has been further clarified and applied to education by philosophers and educators.) In the course of the teacher education program, interaction takes place between what the preservice teachers are taught and what they bring to the learning situation; practical reasoning provides a mechanism which allows each preservice teacher to develop a constructivist understanding. Crucial to a constructivist approach to teacher education is the avoidance of prescribing rules that must be followed by every teacher. While recommendations regarding the best possible teacher practices are common in teacher education, constructivist teacher education will not allow the same outcomes for each teacher. First, each teacher brings a unique background that will interact with the new material in unique ways to result in unique understandings. Second, when teacher education students become student teachers and teachers, these constructed understandings will interact with yet one more particular aspect, that of their particular classroom situation. A practical reasoning approach to teacher education allows the constructivist perspective on learning to prosper in teacher education. (Contains 29 references.) (ND)

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Constructivist Theory and Practice in Teacher Education

by

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Practical Reasoning:

Constructivist Theory and Practice in Teacher Education

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In traditional teacher education programs, teachers have ben prepared almost solely for the purpose of improving student achievement. Research on teaching has given a list of teacher behaviors that must be taught to and exhibited by pre-service teachers. Through numerous "process-product" studies, teachers and teacher educators are told to, for example, engage in 'direct teaching,' (Nuthall and Church, 1973; Stallings and Kaskowitz, 1984), demonstrate 'withitness,' (Kounin, 1970) and provide sufficient 'Academic Learning Time' (Rosenshine, 1983; Powell, 1980; BTES studies). Based on the logical positivist view of behavior, this research allowed only the study of observable, measurable behaviors which did not address any thinking processes on the part of the teacher (Doyle, 1977; Garrison and Macmillan, 1984, Shulman, 1986). The often used phrase 'teacher training' expresses this emphasis on behaviors. Teachers have not been considered or treated as thinking, critical beings who would have their own unique beliefs, desires, and goals for the educational situation. The teacher's background experiences, personal knowledge, and feelings within education have not been encouraged to bring to bear on their preparation for teaching or their decisions in the classroom.

With the recent recognition that teachers are critically thinking, feeling beings, there is a call to recognize and encourage the individual teacher's personal aspects that will significantly enhance their learning and understanding in teacher education programs. A new research focus on hermeneutics -- the readers' interpretation of the text will vary depending on their individual backgrounds, thus their learning from the text will differ -- has gone hand-in-hand with the increase in recognition of the importance of the constructivist perspective on learning. This paper proposes a constructivist approach to

pre-service teacher learning and teaching and teacher education that has as its center practical reasoning. Emphasizing practical reasoning in teacher education fulfills and enhances the important tenets of a constructivist approach to teacher education.

Constructivist Perspective in Education

Much of the recent focus on constructivist education has come from the fields of science education and math education (for example, see Davis, Maher, and Noddings, 1990; Novak, 1987; Glasersfeld, 1989). Work by writers in these fields has helped to define the constructivist position as it relates to student learning. The basic tenet underlying constructivism in recent writings is that "Knowledge is actively constructed by the cognizing subject [learner], not passively received from the environment" (Matthews, 1992, p. 5). Constructivism is a perspective on learning which is initiated from the learner's perspective rather than by that of the teacher. Material is not given to the learner in a one way process. The constructivist perspective is that understanding is constructed by the learner rather than placed upon the learner.

In this view, knowledge is "personally and socially constructed" (Matthews, 1992, p. 3). The learner constructs his understanding based on his own experiences. The key elements of being able to construct one's own learning, then, are going to be 1) a clear understanding of oneself and 2) the ability to bring one's own background into interplay with new material. The result is a construction of understanding from within the learner: "an interaction between what they are taught and what they bring to a learning situation" (from abstract of Loewenberg-Ball, 1988). This will be the definition of constructivist learning used here.

There have been some criticisms of the constructivist approach to science education (see Matthews, 1992). Science is seen as a field which has absolutes, rules, and principles. These absolutes must be learned by the student, and a newly constructed vision of science will not suffice. However, teacher education is an entirely different case. The

view of teacher education established in this paper is that a teacher's learning will be the result of a lifetime of experiences in school in combination with the new material presented in teacher education courses and the practical experiences involved in student teaching. The constructivist perspective is quite appropriate in teacher education because there are, in the view here, no absolute truths to know in teacher education. Rather, there are understandings of possibilities that might be appropriate in the teaching situation. For example, methods classes provide teaching strategies which the pre-service teacher must turn into useful strategies within her own teaching. Thus the constructivist perspective on learning will be useful in understanding how pre-service teachers learn and in providing them with a new type of teacher education program. In fact, several authors have studied the possibility of applying this constructivist perspective to the education of teachers (for example, Tumposky, 1989; Englehardt, 1988; Loewenberg-Ball, 1988; O'Loughlin, 1990).

This constructivist perspective of teacher education has helped further the reversal of the earlier view of teachers as merely exhibiting prescribed behaviors in the classroom. Now teachers can be viewed as critical, thinking agents who use their unique background experiences to construct their own understanding of their teacher preparation. And it is in this climate that practical reasoning can encourage this teacher development to its fullest. Focusing on the description of the constructivist perspective given above, "an interaction between what they are taught and what they bring to the learning situation," practical reasoning provides a mechanism which allows each pre-service teacher to develop that constructivist understanding.

Practical Reasoning

Practical reasoning was originally proposed by Aristotle as an "intellective virtue" used in practical, action situations (Nicomachean Ethics, translated by Sir David Ross). It is in contrast to theoretical reasoning in that its aim is human action. Virtually all antecedent

discussion of practical reasoning is based on this original discussion. Practical reasoning has been recommended as the key to successful teaching (Green, 1976), as a way to bring research into the practical arguments of teachers (Fenstermacher, 1979, 1986), and as a framework for examining research on teaching (Noel, 1990, 1991). The concept of practical reasoning itself has been further clarified by philosophers, and applications to education have been described recently by Fenstermacher, Noel, Pendlebury (1990, 1991), Orton (1992), and Morine-Dershimer, 1988, 1987). This paper will flesh out the concept and practice of practical reasoning and its usefulness as a new constructivist approach to teacher education.

All pre-service teachers will come into the teacher education program with different backgrounds. Their beliefs about teaching; desires, intentions, and goals in the teaching situation; emotions about teaching; experiences with various particulars in the educational situation; and knowledge of universals about education will differ. Thus their understandings of new knowledge and experiences will be different. As such, teacher education must not involve rules that are supposedly applicable to every single teacher. Every piece of information must interact with each person's beliefs, desires, experiences, and knowledge, in unique combinations and sequences, before the complete understanding is to be formed or the decision to act is undertaken. And this is precisely where practical reasoning is crucial in the development of a constructivist approach to teacher education.

Form of Practical Reasoning

An individual's beliefs and desires about a practical situation are the key to practical reasoning. The form of practical reasoning roughly follows the "practical syllogism" laid out by Aristotle, which consists of desires, beliefs, and action. The basic syllogistic form consists of a major premise, a minor premise, and a conclusion to act, from those premises. The major premise is generally considered to be a desire of the individual, stating a universal good to be reached. In teaching, this would be a statement of the

teacher's goal or objective for her students. This would be the broader, more global goal in education. The next premise, termed the minor premise, takes into account the individual's perception of her own particular situation. This minor premise is a belief of the individual about what is possible in this situation, based on perceptions of the situation. Included as the content of the minor premise will be one or more of a collection of possible alternatives available in the present situation. It is these premises about possible alternatives that bring in the key elements of practical reasoning in constructivist learning. The teacher's background that she brings to the present situation interacts with elements of that situation to result in the individual's unique construction of understanding in a constructivist development of understanding. The conclusion of this practical reasoning is a propositional statement about an action to be taken.

Practical reasoning as it is developed here posits a variety of different sources for the belief premises. A possible alternative in the form of a belief premise may come from previous experiences in similar situations, from knowledge about universal ideals in education, or from emotional reactions to the educational situation and to possible alternatives. As an example, take the decision to use the whole language reading approach in the elementary classroom. The following might be the practical reasoning components that are involved in the pre-service teacher's decision to use the whole language approach.

A - I want to improve my students' reading abilities.

B1 - I went through an educational system with the whole language approach, and I learned how to read very well. [previous experience]

B2 - In my reading class at the university, I learned that research shows the importance of using a whole language combination approach. [knowledge]

B3 - When I got to tell a story in class I felt special and unique. [emotions/feelings]

B4 - When I did my pre-professional observations, I saw five teachers using phonics and the students seemed bored. [combination of experience and emotions]

B5 - I feel that students should be able to develop a good self-esteem through learning how to read. [intentions, emotions]

C - I will use a whole language approach in my reading class.

(Morine-Dershimer has conducted a study of teachers' practical reasoning with the similar purpose of discussing the teachers' premises in selecting a teaching action -- Morine-Dershimer, 1987). In this admittedly simplistic example, this pre-service teacher brings her own background to the learning and decision situation. The result is a constructivist understanding -- "an interaction between what [she] is taught and what [she] bring[s] to a learning situation."

Clearly, each individual pre-service teacher or teacher will bring a very different and unique set of background influences upon their future and present learning. When this background is brought to bear on the new situation, then perceptions of the specific situation interact with this unique background as the individual constructs a new understanding of what actions to take in a particular situation.

Practical Reasoning in the Moral Activity of Teaching

Practical reasoning is directly tied to the idea of teaching as a moral activity. As Aristotle describes it, practical wisdom is "a true and reasoned capacity to act with regard to the things that are good or bad for man" (Ross, p. 142). Thus, a teacher in the practical reasoning account will select the best possible goals for her students. Deliberation plays a key role in this reasoning. Aristotle writes that "The man who is without qualification good at deliberating is the man who is capable of aiming in accordance with calculation at the best for man of things attainable by action" (1141b8-18). Clearly, then, practical reasoning recognizes the moral aspects of the teaching activity. And when the teacher uses practical

wisdom in deliberating about the best, good goals for her students, she will be bringing to that deliberation her own beliefs about educational goals. This interaction is, then, constructivist by nature.

Clearly in teaching, as well, pre-service teachers and teachers spend the majority of their time determining the means to reach those good ends. This selection of alternatives, as discussed earlier, is based on perceptions of the specific situation. In fact, the terms "the good" and "the possible" are used to describe the selection of a desired goals and the perception of possible alternatives respectively. The teacher who reasons practically is able to both determine the best "good" to reach through education and the best of "possible" alternative actions to undertake in the practical teaching situation.

Each teaching situation is complex and has many varying aspects. The individual must be able to deliberate through these facets to determine what actions are possible to take ion the way to reaching the end of the human good selected. Situations requiring action are often full of "possible's," and the person who can reason practically is one who can take perceptions about these possible's and decide which actions would lead to the good selected as an end. Alisdair MacIntyre (1988) discusses this in his description of practical reasoning: it "involves the capacity to bring the relevant premises concerning goods and virtues to bear on particular situations" (p. 123).

In sum, each teacher has her own background, with unique experiences, with differing beliefs, desires, and concerns, differing professional and personal knowledge, and different goals and purposes within education. In addition, teachers act in complex environments. It is practical reasoning that provides the ability to reason through all of these aspects to make the decision about which action to take in teaching.

Practical Reasoning in Student Teaching

The practical reasoning approach to constructivist teacher education has much to say to supervisors of student teachers and to researchers of teaching. The following is a

framework of practical reasoning that can be used as a constructivist approach to encourage pre-service teachers to construct their own understandings of teaching. This is a suggested, not prescribed framework. Further, it is in general order, not a required sequence. The goal is that supervisors or researchers of student teachers and teachers will examine the following factors that may have been used in determining a selected action in teaching.

- Goals - goals and ends that the teacher has developed for the teaching situation
  - goals may have been developed on the basis of the teacher's beliefs and/or desires
- Desires - the supervisor may examine the desires for certain ends that the student teacher holds for her teaching and for her classroom
- Beliefs - the supervisor may examine the beliefs that the student teacher holds about good ends and about best actions to undertake in her teaching
  - both beliefs and desires may be formed by a combination of previous experiences and knowledge
- Past Experiences - the supervisor may learn about the past experiences that the student teacher has had which might play a part in her practical reasoning
- Knowledge - the supervisor may attempt to understand the pieces of knowledge that the teacher has about general and specific teaching
- Emotions - the supervisor may attempt to learn how the student teacher feels about the various components of her practical reasoning
  - the supervisor may learn how the student teacher feels about the present teaching situation
- Intentions - the supervisor may try to understand the intentions that the student teacher has toward her teaching and toward the conclusions she reaches through practical reasoning

• Present Situation - the supervisor may examine the classroom situation for aspects that may be involved in the student teacher's practical reasoning

- the supervisor may attempt to understand the student teacher's perceptions of the present classroom situation

(adapted from Noel, 1991, pp. 152-153)

As can be seen in this framework for supervising student teachers, the constructivist perspective is very much in tact. Once again, learning in the student teaching process can be seen as "an interaction between what they are taught and what they bring to a learning situation," the definition of constructivist education used here.

Practical Reasoning as a Constructivist Approach to Teacher Education

A bridge from practical reasoning to constructivist teacher learning and actions can be drawn from Soltis' 1985 analysis of the concept of teaching: it is "the adaptive, intelligent merger of one's goals with the possibilities and limits of the concrete situation" (p. 75). In this view, it is this bringing of the teacher's background into each teaching situation that results in the unique construction of understandings by each teacher. Thus it is practical reasoning that can serve as the basis for the formation of a constructivist approach to teacher education.

Of crucial importance to a practical reasoning, constructivist approach to teacher education is the avoidance of prescribing rules that must be followed by every teacher. While recommendations regarding best possible teacher practices are very common in teacher education, the view of learning and decision-making inherent in practical reasoning, constructivist teacher education will not allow the same outcomes for each teacher. First, each teacher will bring her own background which will interact with the new material in unique ways to result in unique understandings. And second, when teacher education students become student teachers and teachers, these unique, constructed understandings

will interact with yet one more particular aspect, that of their particular classroom situation. The key concept underlying practical reasoning, that each teacher or pre-service teacher will have different understandings that they construct out of a combination between that background and the particular situation, is the key also to a constructivist approach to teacher education.

In conclusion, it has been argued here that a practical reasoning approach to teacher education allows the constructivist perspective of learning to prosper in teacher education. With the use of practical reasoning, teacher educators can use a constructivist approach to the preparation of teachers.

References

Aristotle (1980). The Nicomachean ethics (translated by Dir David Ross). Oxford: Oxford University Press.

Davis, R.B., Maher, C.A., & Noddings, N. (eds.) (1990). Constructivist views on the teaching and learning of mathematics. National Council of Teachers of Mathematics, Reston, VA.

Doyle, W. (1977). Paradigms for research on teacher effectiveness. Review of Research in Education, 5, 163-198.

Englehardt, J.M. (1988). Focus on teacher education in diagnostic and prescriptive mathematics: A developmental constructivist model of teacher education and diagnostic/prescriptive mathematics. Focus on Learning Problems in Mathematics, 10(3), 59-67.

Fenstermacher, G. (1979). A philosophical consideration of recent research on teacher effectiveness. Review of Research in Education, 6, 157-185.

Fenstermacher, G.D (1986). Philosophy of research on teaching: Three aspects. In M.C. Wittrock (Ed.), Handbook of Research on Teaching, 3rd ed., (pp. 37-49), New York: Macmillan.

Garrison, J.W. & Macmillan, C.J.B. (1984). A philosophical critique of process-product research on teaching. Educational Theory, 34(3), 255-274.

Glasersfeld, E. von (ed.). Radical constructivism in mathematics education. Kluwer, Dordrecht.

Green, T.F. (1976). Teacher competence as practical rationality. Educational Theory, 26, 249-258.

Kounin, J. (1970). Discipline and group management in classrooms. New York: Holt, Rinehart, & Winston.

Loewenberg-Ball, D. (1988). Unlearning to teach mathematics. For the Learning of Mathematics, 8(1), 40-48.

MacIntyre, A.C. (1988). Whose justice? Which rationality? Notre Dame, IN: University of Notre Dame Press.

Matthews, M.R. (1992, March). Old wine in new bottles: A problem with constructivist epistemology. Paper presented at the annual meeting of the Philosophy of Education Society, Denver, CO.

Morine-Dershimer, G. (1987, April). Premises in the practical arguments of preservice teachers. Paper presented at the annual meeting of the American Educational Research Association, Washington, D.C.

Morine-Dershimer, G. (1988). Premises in the practical arguments of preservice teachers. Teaching and Teacher Education, 40(5), 46-52.

Noel, J. (1990). Aristotle's account of practical reasoning as a theoretical base for research on teaching. In D.P. Ericson (ed.), Philosophy of Education, 1991, (pp. 270-280). Normal, IL: The Philosophy of Education Society.

Noel, J.R. (1991). A critical assessment of three recent research programs on teaching in light of Aristotle's account of practical reasoning. Unpublished dissertation, U.C.L.A.

Novak, J.D. (ed.) (1987). Proceedings of the Second International Seminar on Misconceptions & Educational Strategies in Science & Mathematics. Education Department, Cornell University, Ithaca, NY.

Nuthall, G. & Church, J. (1973). Experimental studies of teaching behaviour. In G. Chanan (Ed.), Towards a science of teaching (pp. 9-25). London: National Foundation for Educational Research.

O'Loughlin, M. (1990, April). Teachers' ways of knowing: A journal study of teacher learning in a dialogical and constructivist learning environment. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.

Orton, R. (1992, April). Practical reason and effective teaching. Paper to be presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Pendlebury, S. (1990). Practical arguments and situational appreciation in teaching. Educational Theory, 40(2), 171-179.

Pendlebury, S. (1991). Practical reasoning in teaching: A response to Jana Noel. In D.P. Ericson (Ed.), Philosophy of education, 1990 (pp. 281-285). Normal, IL: Philosophy of Education Society.

Powell, M. (1980). The Beginning Teacher Evaluation Study: A brief history of a major research project. In C. Denham and A. Lieberman (Eds.), Time to learn, (pp. 1-5). Washington, DC: National Institute of Education.

Rosenshine, B. (1983). Teaching functions in instructional programs. The Elementary School Journal, 83(4), 335-351.

Shulman, L.S. (1986). Paradigms and research programs for the study of teaching. In M.C. Wittrock (Ed.), Handbook of Research on Teaching, 3rd ed., (pp. 3-36). New York: Macmillan.

Soltis, J.F. (1985). An introduction to the analysis of educational concepts, 2nd ed. New York: University Press of America.

Stallings, J. & Kaskowitz, D. (1974). Follow through classroom observation evaluation 1972-1973 (SRI Project URU-7370). Stanford, CA: Stanford Research Institute.

Tumposky, N. (1989). Teacher education: Considerations for a knowledge base framework. (ERIC Document #ED329511).